SUMMARY AND ANALYSIS OF STAKEHOLDER COMMENTS AND CONSULTANT RECOMMENDATIONS REGARDING THE FORMATION AND FUNCTIONING OF AN IMPLEMENTATION ADVISORY COMMITTEE FOR THE TOTAL MAXIMUM DAILY LOAD (TMDL) FOR POLYCHLORINATED BIPHENYLS (PCBS) IN THE DELAWARE ESTUARY

VOLUME ONE: SUMMARY AND ANALYSIS OF STAKEHOLDER COMMENTS

DECEMBER 2002

Catherine Allen, Christopher Buck & Linda Manning
Marasco Newton Group

Acknowledgments

We would like to thank the interviewees whom we met through the course of this project. We appreciate the time that each person took to meet with us to share their perspectives, concerns, and hopes for the implementation of this complex TMDL. Your thoughtfulness and frankness will make this a better project. The environmental quality of the Delaware Estuary and the TMDL process will benefit from your insights and innovation. We would like to thank the Delaware River Basin Commission Staff for their commitment to this project and support in making our job meaningful and relevant to the tasks at hand.

We hope this plan will provide a meaningful foundation on which to implement a TMDL that will be a model for the country.

Thank You.

— The Marasco Newton Team: Catherine Allen, Christopher Buck & Linda Manning

“A TMDL is not just a technical issue, rather a combination of the disciplines of philosophy, chemistry, biology, economics, and a little bit of theology.”

— Stakeholder, Delaware Estuary

PREFACE

This report is divided into two volumes. ***Volume One: Summary and Analysis of Stakeholder Comments*** comprises two main sections which document the results of our interviews with a broad cross section of representatives from municipalities; industry; regulatory agencies; and environmental, fishing, and recreational interest groups. Volume One is composed of the following main sections:

Section 1.0 – Background and Introduction. This section introduces the reader to the purpose of the report and the context and activities leading up to the desire to convene an Implementation Advisory Committee.

Section 2.0 – Stakeholders' Concerns, Comments, and Opinions Regarding TMDL Development and Implementation. This section is divided into three sub-sections for clarity. One describes issues associated with the process that the DRBC has employed to develop and communicate the TMDL. The other two sub-sections describe issues associated with technical aspects of the TMDL development, its scientific underpinnings, and regulatory parameters.

Section 3.0 – Stakeholders' Recommendations Regarding the Formation and Functioning of the Implementation Advisory Committee. This section describes interviewees' views on representation on the Implementation Advisory Committee (IAC), qualities of participants, and principles under which the group should function.

Section 4.0 – Summary and Conclusions

Volume Two: Marasco Newton Group's Recommendations Regarding the Membership, Structure, and Functioning of the Implementation Advisory Committee was developed to provide a foundation from which a successful Implementation Advisory Committee can be launched. Designed as a practical plan for setting up an Implementation Advisory Committee, it focuses on recommendations and rationale for structure and composition of an Implementation Advisory Group, and provides a series of framing documents for getting the group started. Recommendations are based on best practices and Marasco Newton's experience facilitating and mediating multi-party decision-making as tailored to the needs and expectations of the interviewees and DRBC staff. A rationale is provided for each recommendation as well as suggested action steps to implement the recommendation.

TABLE OF CONTENTS

Volume One: Summary and Analysis of Stakeholder Comments

Volume Two: Marasco Newton Group's Recommendations Regarding the Membership, Structure, and Functioning of the Implementation Advisory Committee (187 KB)

1.0 Background and Introduction

Since 1989, with the creation of the Delaware Estuary Toxics Management Program, the Delaware River Basin Commission (DRBC) has been working to decrease toxics such as polychlorinated biphenyls (PCBs) in the Delaware Estuary. PCBs are a class of synthetic compounds that were manufactured and used extensively in electrical equipment such as transformers and capacitors, paints, printing inks, pesticides, hydraulic fluids, and lubricants. Their manufacture was banned by the U.S. Environmental Protection Agency (EPA) in the late 1970s, but existing uses in some electrical equipment and some small exceptions were allowed. PCBs are lipophilic; as a result they tend to bind to organic particles in sediments and soils. PCBs are also chemically very stable, an attribute which allows them to persist in the environment for years following their release. When consumed, PCBs accumulate in the tissue of the fish and other wildlife.

Section 303(d) of the Clean Water Act requires states to identify bodies of water that will not meet water quality standards, to rank those bodies by priority, and to develop TMDLs for those waters. Since the 1980s, the states of Delaware, New Jersey, and Pennsylvania have issued fish consumption advisories for portions of the Delaware Estuary due to PCB concentrations measured in fish tissue. Advisories are currently in effect from Trenton, New Jersey to the mouth of the Delaware Bay. Each of these states has listed the Delaware Estuary as impaired by PCBs and is working through the DRBC to develop a collaborative TMDL. Each of the states has its own target date for the TMDL. Both New Jersey and Delaware have deadlines set in the course of litigation. New Jersey's September 2003 deadline is contained in a Memorandum of Agreement between New Jersey and EPA Region 2. Delaware faces a court-ordered deadline contained in a consent decree. Pennsylvania has listed the Delaware Estuary as impaired for PCBs but has no court ordered date by which a TMDL must be completed.

The goal of the Delaware Estuary TMDL as described in the March 2002 *Delaware Estuary PCB Strategy*, developed by a subcommittee of DRBCs Technical Advisory Committee (TAC), is to achieve water quality standards for Zones 2, 3, 4, and 5 of the tidal portions of the Delaware River ("the Delaware Estuary") and eliminate the necessity of fish consumption advisories. The Strategy includes nine main activities:

1. determine the water quality targets for the TMDL;
2. characterize PCB concentrations in the estuary ecosystem;
3. identify and quantify sources and pathways of PCBs;
4. determine transport and fate of PCB loads within the Delaware Estuary;
5. establish waste load allocations for point sources and load allocations for non-point sources of PCBs within the Delaware River Basin;
6. develop an implementation plan to reduce PCBs entering the estuary;
7. increase environmental awareness of toxicity issues in the estuary;
8. monitor long-term PCB concentrations in the air, water, and sediments of the estuary; and
9. monitor long-term concentrations in and impacts to living resources of the estuary.

A Commission report, released in June of 1998, entitled *Study of the Loadings of Polychlorinated Biphenyls from Tributaries and Point Sources Discharging to the Delaware River,* was the first attempt to quantify the amount of PCBs in the estuary and attribute discharges to certain point sources. This report catalyzed potential dischargers' interest in becoming involved in this project.

1.1 Regulatory Foundation and Parameters

The DRBC has partitioned this TMDL process into several major steps. The first step is a calculation of the amount of PCBs that the Estuary can accept on a daily basis and still meet the decided upon standard(s); this is called the total maximum daily load (TMDL)—the ability of the estuary to assimilate PCBs. It is often described by this calculation:

TMDL = sum of non-point sources + sum of point sources + margin of safety

The second step is identifying the quantities of PCBs that are being discharged into the estuary and the sources of those discharges. The difference between the total amount entering the estuary and the calculated TMDL is the aggregate reduction that needs to occur. The third step is allocating to individual sources specific reductions required to meet standards. As mentioned above, these reductions are classified by source type and are called load allocations (LAs) in the case of non-point sources and waste load allocations (WLAs) in the case of point sources. Finally, the reductions can be implemented, which is the focus of this report.

In the case of the DRBC, a determination of these allocations may be made under Article 4 of the DRBC Water Quality Regulations. These allocations may be referred to the appropriate states for use in establishing permit limitations or other requirements. Since water quality standards vary in the different zones of the river, TMDLs will be established for individual zones or a combination of zones as appropriate.

The study area encompasses the regulatory jurisdiction of not only the states of Delaware, New Jersey, and Pennsylvania, but two U.S. EPA Regions (2 & 3). At the request of these states and the EPA, the DRBC is taking the lead in this complex, multi-jurisdictional effort to develop and implement a TMDL for PCBs in the Delaware Estuary. The DRBC has been seeking advice from its Technical Advisory Committee (TAC), which is a standing advisory body appointed by the DRBC's Commissioners and includes representatives from industry, state and federal government, academia, municipalities, agriculture, environmental, public health, and fish and wildlife resources sectors.

1.2 Purpose of the Report

In the fall of 2001, the DRBC contracted with the Marasco Newton Group to provide neutral convening and facilitation services in support of the implementation phase of the TMDL. Marasco Newton was charged with conducting stakeholder interviews with the purpose of gathering opinions, suggestions, and comments on the PCB TMDL and analyzing and organizing that information in a fashion useful to ensure smooth transition to the implementation phase. *Volume One: Summary and Analysis of Stakeholder Comments* of this report describes what we heard from stakeholders during the course of

these interviews. It is a discussion of the issues of concern facing the people and the institutions impacting and impacted by PCBs in the estuary. *Volume Two: Marasco Newton Group's Recommendations Regarding the Membership, Structure, and Functions of the Implementation Advisory Committee* explores the challenges associated with the complex, multi-jurisdictional nature of TMDL implementation in the Delaware River and provides recommendations.

This report is based on interviews with 71 people, carefully chosen to ensure balance among stakeholder groups. It is not an exhaustive analysis of all individuals, organizations, or businesses that may have a stake or interest in this PCB TMDL. It is not a legal document nor a technical report. It does not claim to be statistically significant with regard to the prioritization of concerns or recommendations by different groups, nor does it judge the validity or appropriateness of stakeholder positions, interests, or comments. We have sought to reflect interviewees' comments accurately and carefully. As a rule, comments reported are not direct quotes, but paraphrases and summaries of issues and concerns expressed by the interviewees. The sections describing stakeholder opinions (Volume One, Sections 2.0 and 3.0), often portray interviewees' opposing opinions. We make no attempt to reconcile these positions, but merely describe this issue's diverse facets with appropriate nuance.

1.3 Structure of the Report

This report is divided into two volumes. ***Volume One: Summary and Analysis of Stakeholder Comments*** comprises three main sections which document the results of our interviews with a broad cross section of representatives from municipalities; industry; regulatory agencies; and environmental, fishing, and recreational interest groups. Volume One is composed of the following main sections:

Section 1.0 – Background and Introduction. This section introduces the reader to the purpose of the report and the context and activities leading up to the desire to convene an Implementation Advisory Committee (IAC).

Section 2.0 – Stakeholders' Concerns, Comments, and Opinions Regarding TMDL Development and Implementation. This section is divided into three sub-sections for clarity. One describes issues associated with the process that the DRBC has employed to develop and communicate the TMDL. The other two sub-sections describe issues associated with technical aspects of the TMDL development, its scientific underpinnings, and regulatory parameters.

Section 3.0 – Stakeholders' Recommendations Regarding the Formation and Functioning of the Implementation Advisory Committee. This section describes interviewees' views on representation on the IAC, qualities of participants, and principles under which the group should function.

Section 4.0 – Summary and Conclusions.

Volume Two: Marasco Newton Group's Recommendations Regarding the Membership, Structure, and Functioning of the Implementation Advisory Committee was developed to provide a foundation from which a successful IAC can be launched. Designed as a practical plan for setting up an IAC, it focuses on recommendations and rationale for structure and composition of an IAC, and provides a series of framing

documents for getting the group started and deliberating innovative and cost-effective solutions in a timely manner. Recommendations are based on best practices and Marasco Newton's experience in facilitating and mediating multi-party decision-making processes tailored toward the needs and expectations of the interviewees and DRBC staff.

1.4 Study Methodology

The interview process was designed and developed by a team of neutral facilitators from the Marasco Newton Group, Arlington, Virginia, under a contract with the Delaware River Basin Commission.

Marasco Newton Group facilitators interviewed a broad spectrum of stakeholders, including members of industry and municipalities who were likely dischargers or conduits of PCBs, environmental groups, representatives of coalitions of these groups, and all state and federal agencies that play a role in the TMDL process. The Team developed an interview guide consisting of 12 questions aimed at gathering information around five primary areas:

1. familiarity and involvement with PCB issues and the TMDL process;
2. familiarity and involvement with collaborative processes and specifically with the DRBC;
3. interest and support for a cooperative approach to the TMDL implementation;
4. ability to, and interest in, serving on the TMDL Implementation Advisory Committee; and
5. whether the organization could be represented by an alliance or coalition or as an individual stakeholder.

Many of the questions contained follow-up questions, and emphasis was placed on certain questions depending on the type of stakeholder being interviewed. For example, regulatory agencies being interviewed were asked detailed questions about challenges and suggestions relating to multi-jurisdictional issues. See *Appendix A: Interview Questions* for the complete set of questions.

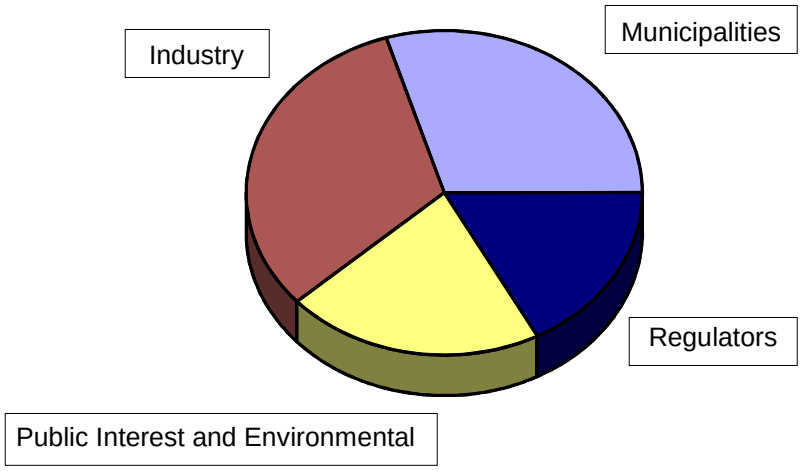
Interviewees were recruited as follows. Marasco Newton Group compiled a list of several hundred individuals and groups who had been involved in or had shown an interest in the Commission's work in the past (e.g., participants in the development of the Comprehensive Conservation and Management Plan for the Delaware Estuary, members of the Water Resources Association of the Delaware Basin, and members of the Commission's Watershed Advisory Council). The DRBC reviewed the list and chose 36 initial candidates who had been involved in the effort to date, were part of the regulatory community, were one of the top 10 dischargers based on results from the initial monitoring studies, or were likely to be interested from a public interest or environmental perspective. Because one of the concepts underlying the IAC was to propose cost-effective solutions capable of immediate implementation and to develop comprehensive alternatives for achieving water quality objectives in the long run, candidates who the DRBC felt would have either a large stake or innovative ideas were prioritized. Potential interviewees received a letter from the Commission's Executive Director, Carol Collier, explaining the aim of the IAC and requesting an interview with Marasco Newton Group. Interviewees were asked if there were other stakeholders or innovators that they would recommend for an interview. These people were also

contacted, although a letter was not sent in every instance.

A total of 71 individuals were interviewed between March and November of 2001. They represented 47 different entities—regulators, dischargers, industries and municipalities. A list of those interviewed and their affiliations can be found in *Appendix B: List of People Interviewed*. Interviews were conducted either individually or in small groups (from a single organization), either in-person or over the telephone. Interviews lasted from 30 minutes to over 2 hours. In order to promote frank discussion, interviewees were assured that comments, suggestions, and opinions would not be attributed to any individual or organization. The following chart shows the breakdown by major stakeholder group.

Interview notes were shared among the team, and the final report was reviewed by all Marasco Newton Group Team members for consistency and accuracy. The report will be sent to all interviewees, and their comments will be assembled in an Addendum to the report.

Chart 1: Breakdown of Interviews by Stakeholder Type
(number of groups)



2.0 Stakeholders' Concerns, Comments, and Opinions Regarding TMDL Development and Implementation

Interviewees described a wide range of concerns that they believe will impact the implementation of this TMDL. Across stakeholder groups, three themes stand out: (1) the need for an agreed upon scientific basis for allocating discharge reduction or cleanup responsibilities; (2) the need for processes and procedures for communication and decision making where expectations for involvement and input are clear, technical decisions are understood, and decision making processes are documented and transparent; and (3) the need for regulators to speak with a common voice.

While stakeholders did have significant opinions about the mission and the makeup of the future IAC, interviewees mostly had concerns about the way the project had been conducted and expressed that the major issues noted below needed to be addressed in order for an implementation group of any kind to be viable. That relative priority is reflected in this report.

2.1 Issues Surrounding Communication and Availability of Information and Data

Incomplete or inadequate communication of study parameters and lack of information sharing led potential dischargers to distrust DRBC. Potential dischargers frequently complained that the DRBC failed to communicate effectively, that the DRBC was not sufficiently clear about the details of the stakeholder process, and that these shortcomings eroded the limited trust that existed at the beginning of the TMDL process. Several industry representatives stated that little trust existed between the various regulators (including the DRBC) on the one hand, and members of the regulated community on the other. One industry stakeholder spoke of the appearance of trust—of cordiality—but admitted feeling that the DRBC opened the stakeholder involvement process without articulating how stakeholder input would influence the outcome. One interviewee said, "the more DRBC dictates the answers, the less credibility they have." Specific critiques included:

- the sense that all the cards are held by (and close to the chest of) the regulators;
- that no open or transparent process has been established to develop meeting agendas or contribute to the framing of meetings or questions;
- a lack of faith in the confidentiality of meetings that precludes open communication or discussion of "real risks" without fear of recrimination;
- little articulation of important issues in writing;
- belief that there was unequal access to information among stakeholders (Many potential dischargers expressed the desire to learn more about the sampling and analysis results and to receive periodic updates on the TMDL development process. Dischargers noted that as of their interview date they had not received any communication from the DRBC with sampling data results. One industry representative stated that the TAC had yet to see any of the sediment or fish tissue data);
- a lack of faith in the technical qualifications of DRBC staff to direct—let alone conduct—the modeling effort that will form the basis of the TMDL. (Sometimes this was expressed as

DRBC staff having a professional stake or interest in the outcome therefore driving the scientific decision making. Other times it was described as a lack of time or expertise to both manage the studies and effectively communicate with stakeholders; and
- a concern that the DRBC may not have the resources it needs to conduct "good science" in this case.

Industry representatives complained that they were accused of stalling the process when they felt they had legitimate concerns about data integrity based on technical merit.

Environmental stakeholders felt that the process was sufficiently open, but that communication of the process could be improved. Environmental and some regulators expressed that they thought the process was more open to input than many TMDL processes and that industry and other stakeholders had a lot of opportunity to engage in the process through mechanisms such as the TAC and its subcommittees. Some were concerned that it was so open, undue influence by dischargers was a risk. They thought that communication about the process could be improved and that they did not understand the status of scientific studies to date. Relative to the potential dischargers, few environmental groups are following the scientific and technical aspects of the TMDL development.

Relative to communication of data, regulators tended to focus on the need to have good enough data to prevent litigation and to ensure equal access to the data for all parties; this need affects—and is affected by—the choice of data format (e.g., spreadsheet versus database) and its consequent ease of access, use, and dissemination.

Roles of the various technical advisory groups are unclear. In a related communications issue, there was inconsistent understanding as to the purposes and the role of DRBC's TAC and its subcommittees. Specific questions included:
- Can/should the DRBC implement a course of action without sign-off from the TAC?
- Is the TAC making decisions related to this project or simply advising?
- What is the relationship between the TAC and its subcommittees?
- How were the subcommittees formed? How was independence or balance of representation ensured?
- What recourse do stakeholders have if the TAC recommends a certain action and is ignored by the DRBC?

2.2 Issues Surrounding the Need for "Good Science" to Inform the TMDL

Nearly all regulators and potential dischargers expressed the necessity of having "good science" as a foundation for the TMDL models and data collection efforts that inform the waste load and load allocations. How good science was defined varied significantly from person to person. Potential dischargers from both industry and municipalities voiced concern that the scientific processes that were being employed by the DRBC were not meeting their definition of good science and, therefore, would not be sufficient to meet their level of comfort that allocations reflected true relative contributions of PCBs in the estuary. Specific areas of concern that stakeholders described are identified below.

Data quality, data amount, and scientific uncertainty exist for many. Both regulators and potential dischargers alike speak of the need to let the "science drive the process" of TMDL development and support the need for good science. A striking difference between industry and regulatory stakeholders is the role of science that each group apparently envisions in the development of the TMDL. Whereas the regulators typically expressed their desire to incorporate the best science possible and to allow the science to drive the outcome, they also acknowledged that any expectation of "perfect science" is unrealistic. Agency representatives also stated that:

- they do not want the studies for this TMDL to be a black hole for funding. They have small budgets that they have to allocate among many needs;
- there is insufficient funding to develop all TMDLs at industry's desired level;
- different agencies have different funding cycles, and public agencies often do their budgeting several years in advance. This makes securing funding for the TMDL by the court ordered deadline difficult, especially since the monitoring, cleanup, and control needs continue to evolve;
- extensive studies are not required by law; and
- simply meeting the 2003 deadline is going to be an enormous challenge, and there will always be room for improvement.

Potential dischargers protested that instead of conducting a thorough study of PCB concentrations as was done for the Fox River in Wisconsin and the Hudson River in New York, the DRBC is attempting to gather as much data as possible as quickly as possible, regardless of whether the data are accurate or representative of all sources (point and non-point). Regulators reply to this criticism by pointing out that both in the Hudson and Fox cases, a Superfund designation was driving this process, bringing more resources and a responsible party to the table. Regardless, potential dischargers felt that the science is constantly evolving and the best science possible should be applied to this issue. If they are going to have to spend considerable sums of money to address PCB issues, they want to make sure that:

- all sources have accurately been identified;
- actions they (and others) take will actually achieve the environmental benefits intended; and
- implementation actions are focused appropriately and equitably imposed.

Environmental stakeholders did not evidence frustration with the science conducted to date. Some expressed belief that all of the attention on conducting good science is a stall tactic to delay requirements to implement controls. One stakeholder felt that potential dischargers would never be satisfied with any amount or type of technical and scientific studies conducted.

Analytical methods and the use of data—are different analytical protocols a problem? In 2002, the DRBC required 75 industrial dischargers, publicly owned treatment works (POTWs), and other suspected sources of PCB contamination to collect and analyze samples for PCBs at their industrial or POTW and storm water discharge points. Those interviewed who were required to do the monitoring generally understood this to be a preliminary data gathering effort. They now believe that the DRBC intends to use this monitoring data as input into the scientific models that will assist in determining waste load and load

allocations. They are concerned that the accuracy of the sampling data is highly suspect because:

- dischargers employed different laboratories using different analytical methods (8082 and 1668, Revision A) to collect and analyze samples;
- different sample sizes are being used; and
- data quality assurance and quality control (QA/QC) was questionable and was also performed by different laboratories.

Dischargers contend that, as a result, it may be impossible to verify whether the high number of hits (primarily from municipal dischargers) indicate sampling and analysis errors or actual PCB presence. Members of the regulated community also objected to the way PCB congeners are sometimes grouped together during analysis, noting that they act differently and should be analyzed differently. These interviewees described method 8082 as a cheaper and faster sampling method, and said that more data exists on the Aroclor method (8082) than on method 1668A. Industry stakeholders also contended that the DRBC refused to acknowledge that the 8082 sample results may have errors. Specific critiques are:

- the DRBC is not managing a credible or legally defensible data gathering and analysis process. EPA and even the states have very strict data gathering and management protocols when developing regulations;
- dealing with minimum detection limits for low-levels of PCBs may skew sampling data and give inaccurate detection results for setting TMDLs. For example, variance is likely to occur in low-level detection samples where some "hits" may be detected as "half-hits" and the actual source unknown, so averaging them would give very low levels, with no way to trace the source;
- hits are not explainable. It is hard to evaluate hypothetical occurrences and historic causes; and
- sample sizes are different.

Those with concerns for impacts on non-aquatic wildlife such as eagles and mink pointed out that a small subset of individual congeners are of greater concern for toxicity to wildlife. The more detailed method 1668A better serves the purpose of understanding likely wildlife impacts as the congeners with high dioxin equivalence can be better modeled and understood.

Discomfort with the way the initial monitoring data may be used. The stated perception among industry stakeholders, in particular, seems to be that the initial sampling and analysis effort was (or should have been) a preliminary investigation, not data collection for development of the mass-balance model and load and waste load allocations. These stakeholders expressed a great deal of concern that because of the differences mentioned above, these samples should not be used to create waste load and load allocations. Some suggested that if the DRBC uses the data it collected for purposes other than screening, it will likely be challenged in court.

Third-party QA/QC of data unclear. Industrial and municipal dischargers seemed generally unclear whether the DRBC has had a third party evaluate (perform a QA/QC review of) the data submitted. Many expressed concern that the DRBC has not followed an acceptable method for data quality assurance and management; experts were hired for data analysis, but none for data quality review and assurance.

Attention to point sources relative to non-point sources. Perhaps the most highly charged technical issue at the heart of the PCB TMDL is that of the relative contribution of point and non-point sources of PCBs. Because the distinction between these source types is intimately linked to the TMDL through waste load and load allocations, it necessarily has an enormous impact on the financial burdens stakeholders can expect to bear in order to reduce PCB mass loading to the Delaware Estuary. Industry and municipal stakeholders expressed that they felt relatively more attention is being focused on identifying point sources [National Pollutant Discharge Elimination System (NPDES) permit holders] than is being spent on non-point source track-down (e.g., contaminated sediments, air deposition, hazardous waste sites).

Industry and municipal representatives alike frequently told us that:

- they believe non-point sources to be the most likely source of PCBs;
- the DRBC unfairly asked for more data from the point source dischargers than the non-point sources, and non-point sources are not being sampled to the same extent as point sources;
- the DRBC is focusing data gathering on the minor players in the PCB issue (i.e., point sources) rather than on the non-point sources simply because it is easier to gather data from—and ultimately to regulate—the point source dischargers. It was noted by one interviewee that this is a real issue for regulators since controlling air deposition may not lie within the purview of the regulatory agencies involved or the sources may be distant. An agency stakeholder pointed out that Dr. Eisenreich's data show that sources of air deposition are probably local;
- point source (but not non-point source) dischargers were subject to analysis method 1668A; and
- identifying non-point sources is critical to getting the regulated community to cooperate.

Regulators expressed their concern that a TMDL be enforceable and insisted on individual waste load allocations for point source dischargers as a part of the TMDL for the 2003 deadline. Environmental groups expressed the point of view that regardless of the point source/non-point source discussion, PCBs are the byproduct of industrial process and industry should contribute to the track down and removal of these sources regardless of their location.

Definition of point sources and non-point sources. The interviewers noted that definitions of what constitutes a point source or a non-point source vary by individual, but not necessarily by stakeholder type. One municipal representative told us that they consider their POTW a non-point source discharger, since they have very few industrial point source contributors to their waste stream, indicating that most of their PCB contributions were most likely coming from storm water or other land-based runoff.

Trackdown of PCB sources is critical. Environmental organizations and regulatory agencies expressed the belief that trackdown of sources will be the critical factor in success for implementing this TMDL. Targets of removal are likely to be low, which means that every source possible must be accounted for and addressed in order to meet environmental and water quality goals. They contend that resources should not be wasted when science and

modeling begin to yield marginal returns but should be shifted to tracking down and removing sources of PCBs, including those from historical sources. Environmental organizations feel that members of the public and their constituencies can assist in identifying sources of PCB contamination since they know their local areas well. They suggest that this be done in small group meetings around the Estuary watershed.

Trackdown difficult at POTWs. Municipal representatives noted a concern about conducting effective track-down studies at POTWs due to the following factors:

- there is an increasing trend for industries to send their pre-treated industrial waste through trunk lines into the POTW system because this gets industries out from under their otherwise onerous NPDES permitting requirements;
- it is difficult to detect and prevent illegal dumping activities; and
- the role that storm water plays in combined sewer systems turns a POTW into a conduit for mixed point and non-point source discharges.

Municipal authorities expressed the fear that they will be held responsible for discharges of PCBs over which they have little or no control, such as storm water and illegal dumping or other sources going through their pipes. They are further afraid they will be used as scapegoats in cases where regulators (e.g., state environmental agencies) do not have or are unwilling to allocate the resources to track down the ultimate source of contamination.

Criteria and standards for fish consumption and water quality. Regulators and industry representatives alike spoke of the need for clarity regarding the relevant criteria—the target at which the DRBC's TMDL process is aimed. Generally speaking, agency representatives professed that the *TAC's Subcommittee on Criteria* has already determined that the goal of the TMDL is to eliminate fish tissue advisories and that fish tissue criteria have been agreed upon. These criteria take into consideration the cumulative effects on fish as related to human consumption, including an evaluation of toxicity data and fish consumption rates. Some regulators and discharger representatives believed that the water quality criteria are still being debated. Perceptions and questions surrounding this debate include:

- allowable fish tissue concentrations are higher for fish available in supermarkets (regulated by the Food and Drug Administration) than for those caught in the estuary. Others stated that FDA concentrations are not based on health risk;
- should water quality criteria be based on bioconcentration and bioaccumulation factors derived from the literature or actually measured in the Delaware River;
- should state criteria and protocols for fish advisories be made uniform;
- is removing fish consumption advisories the goal of the TMDL or is there some other water quality standard, (And if so, based on what?);
- if elimination of fish consumption advisories is the goal, are we targeting our implementation activities on those types of contamination that are most bioavailable to fish or those species most often consumed; and
- can and will the PCB mass-balance model adequately describe bioavailability, bioconcentration, and bioaccumulation to make meaningful predictions of fish issue concentrations?

Differences between water-based standards and land-based standards. One additional complication related to standards concerns the differences between the land-based standard for PCBs under Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the likely more stringent water-based standards under the Clean Water Act. It is the belief of some potential dischargers that they have already met their legal obligations under the law by cleaning up known areas of PCB contamination to the land-based standard applicable to federal and state CERCLA sites. They further expressed the concern that scientific modeling is likely to bear out that some of these previously cleaned-up land-based sites of contamination (e.g., state and federal Superfund sites) are contributing significantly to the PCB problem in the river.

Belief that if standards are too strict, technology will not be available to achieve them. Some stakeholders (notably those from industry) asserted that if the applicable water quality standard chosen by the DRBC is too low, the technology to achieve (or measure progress toward) the standard may not exist. They claimed that technologies exist to address levels in the parts-per-million (ppm) range, but that limits in the parts-per-billion to parts-per-trillion (ppb to ppt) range cannot be met with current technological solutions. They noted that TMDLs are designed to meet standards, but that if controls prove incapable of meeting the standards, one response may be eventually to reevaluate the standards. Environmental stakeholders, however, countered that the purpose of the TMDL is to protect public and environmental health by removing toxins like PCBs from the environment, that all efforts should be made to remove PCBs, and that standards are less important. One agency representative expressed that when levels are below detectable limits enforceable under the approved NPDES sampling protocol, it is a waste of time to focus on how far below these limits the DRBC will push, as the actions required will be the same—track down and eliminate PCBs.

Belief that removing fish advisories using current methodology is impossible. Some dischargers subject to the DRBC's PCB monitoring requirements suggested that meeting the fish consumption goal as presently conceived (e.g., cancellation of the fish consumption advisories in the Delaware) is impossible. These stakeholders suggested that the goal of safe fish consumption through the current 2 ppb water quality standards will be impossible to meet because the sources of PCBs have not all been identified (in particular, PCBs from non-point sources entering the river through combined sewer overflows). Many stakeholders from the regulated community expressed concern that the cost of reducing already minuscule point sources of PCBs will be very high and will not produce the intended results—edible fish.

Coalition critique of the specifics of the homolog model. In addition to information heard through stakeholder interviews, the Delaware Estuary TMDL Coalition submitted a paper to the TAC in June of 2002 entitled *Proposal for a Collaborative Scientific Process: Development of the PCB Model*. This paper articulates additional areas of technical concern (mostly surrounding modeling) for potential dischargers and proposes approaches for addressing these issues. It also outlines areas where the Coalition can provide assistance. The entire report can be found in

Appendix C, but the major technical issues identified are as follows:

1. *Model Calibration*—belief that current version of the DRBC PCB homolog model has not been calibrated to reasonably reproduce long-term temporal variations of PCB concentrations in water column and sediments and therefore does not accurately understand (and predict) the role of legacy contaminations and sediment.
2. *Active Sediment Layer*—assumption that the sediment layer available to fish is 5 cm is not substantiated. Existing data (with core samples if necessary) should be reviewed to develop a sensible and scientific manner of determining the active sediment layer.
3. *Particulate Organic Carbon Balance*—the Coalition agrees with the DRBC's model being based on particulate organic carbon (POC) since PCBs are understood to be associated with POC. The Coalition feels that more work needs to be done to develop accurate POC estimates from algal production, burial rates, etc.
4. *Air/Water Flux*—the amount and direction of transfer of PCBs from the water to the air or the air to the water is critical to understanding sources of PCBs in the estuary. Current studies by Dr. Eisenreich and colleagues indicate that average long-term flow could be used in predicting potential volatilization. The Coalition believes that this does not account for tidal effects and underestimates instantaneous water velocities, and therefore, volatilization rates.
5. *Delaying Incorporation of Zone 6*—delaying incorporation of Zone 6 (effectively the mouth of the Estuary) into the Fate and Transport Model could significantly affect results for portions of the study area. The Coalition would like to have a presentation of the scheme that will ensure boundary conditions between Zones 5 and 6, as currently conceived will adequately reflect PCB loadings and behavior in Zone 5.
6. *Identification and Quantification of Point and Non-Point Sources*—the Coalition believes that PCB loadings from watershed non-point sources [e.g., storm water, combined sewer overflow, Superfund sites, Resource Conservation and Recovery Act (RCRA) facilities] has not received adequate attention (see more detailed discussion from all stakeholders above).
7. *Food Chain Evaluation*—bioaccumulation factors based on instantaneous water column concentrations are not an appropriate measure of long-term PCB uptake in fish because they do not take into consideration fish that are directly exposed to sediments and because significant short-term variations exist in water column concentrations.
8. *Establish Appropriate Targets for the TMDL*—appropriate target concentrations need to be defined. They should be aimed toward allowing for the elimination of advisories in the estuary based on work done in other relevant situations (e.g., Great Lakes, Hudson River, etc.). (See discussion in Section 2.3 regarding criteria and standards for fish consumption and water quality.)
9. *Uncertainty Evaluation and Sensitivity Analysis*—it is likely that the target for the PCB TMDL will be extremely low. Small changes may have profound effects on conclusions based on the results of the modeling. To ensure that the model will meet the goals of the TMDL by having the resolution

necessary to reliably identify significant sources and pathways of PCBs, quantitative sensitivity analyses should be conducted per current EPA guidance.

Impacts on eagles can help to calibrate the model. A wildlife protection agency scientist believes that recent data exploring reproductive impacts of eagles from PCBs in the Delaware Estuary should be useful in helping calibrate the model.

Recent Actions Have Assuaged Some Concern. It is important to note that several stakeholders with serious concerns regarding data quality and data communication commented that recent actions of the DRBC have gone some way in making them feel more comfortable with the TMDL development process. These actions include (1) hiring Limno-Tech to assist in the modeling and data collection efforts, (2) clarification of some issues at recent TAC Expert Panel meetings, (3) participating in a two-day workshop to review current status of modeling and data gathering studies, and (4) taking steps to make data available via a Web site (or other electronic medium) as it becomes available. Volume II of this report entitled, *Marasco Newton Group's Recommendations Regarding the Membership, Structure, and Functioning of the Implementation Advisory Committee* has been designed to promote dialogue and resolution of the remaining issues.

2.3 Issues Surrounding Regulatory Uncertainty

Regulatory inconsistencies between the states and EPA make targets for TMDL unclear to stakeholders. Many potential dischargers expressed confusion that the regulatory agencies did not all seem to be on the same page with regard to the goals and the specifics of this TMDL. Regulatory agencies, for the most part, agreed that more work needed to be done to clarify points of policy (e.g., standards) and to ensure that all are rowing in the same direction. Everyone who had an opinion expressed that this is a many-layered and complex TMDL because it involves three states, two EPA regions, and the DRBC, which has its own unique authorities. The relationships among these entities also complicates the dialogue since the DRBC gets much of its funding for this project from the states. Interviewees' responses suggested that this regulatory uncertainty fuels stakeholder angst, speculation, and interpretation regarding, for example, the possibility and desirability of a phased TMDL. Stakeholders identified uncertainty revolving around the following areas:

- different state priorities and schedules for the Delaware Estuary TMDL;
- different sets of state-promulgated water quality criteria; and
- differences in opinion between EPA regions as to whether a phased TMDL would be acceptable and what "phased" means.

Both regulatory and industry stakeholders called for the relevant state and federal regulatory agencies to work together to elucidate the applicable regulatory parameters.

2003 deadline viewed unrealistic by some. Most potential dischargers questioned the practicality of trying to establish an equitable and cost-effective TMDL by 2003. They expressed doubt that the DRBC can obtain sufficient meaningful (comparable, representative) sampling data by that time. Others stated their skepticism more forcefully, claiming that the court-ordered 2003 deadline for a PCB TMDL is totally

unrealistic: "It took years to model the PCB data in the Hudson, how does the DRBC think it will gather and use quality data in one year?" They voiced concern that the rush to develop a TMDL (and the mass-balance model on which it is to be based) shortchanges the collection and analysis of essential data on the range of potential PCB sources—especially non-point sources. These stakeholders argue that this is bad science and will likely result in a default discharge limit near zero, which will be impossible for them to meet (and which will lead directly to litigation). As one industry stakeholder put it, although it is shaped by policy considerations, a TMDL is fundamentally a scientific effort, and real policy cannot be forged until the science is in hand. One apparently unexplored element of this science mentioned by this stakeholder is the role of natural attenuation as a removal pathway for PCBs in the Delaware.

The call for a phased TMDL. Many times interviewees suggested looking into the possibility of a "phased TMDL"; however, the meaning of "phased TMDL" is interpreted differently by various parties. Reasons cited for conducting a phased, or iterative, TMDL are as follows:

- it allows for advances in science to be incorporated (this was suggested along with the concern that the TMDL is—to too great a degree—a moving target);
- there will be a continued need for science and studies to further track down sources of PCBs after the 2003 deadlines; and
- it allows implementation of those reductions that have the least possibility of being wrong and that promise "the biggest bang for the buck."

The strongest advocates for a phased approach were the entities that are seeking the most precise science and are likely to have the biggest price tag associated with implementation—large POTWs and industry. Regulatory agencies and environmental groups were mixed in their opinions of the idea. Neither wanted to cause undue financial hardship to industry, but wanted to make sure that a "phased approach" did not result in putting off implementation of PCB reductions. Environmental interests remained unconvinced of the value of a phased approach. One environmental advocate pointed out that the court orders driving the process do not permit a phased approach.

Timing of implementation and the associated financial burden. Interviewees on all sides spoke of the need to distribute the cost of implementing the TMDL equitably and to "pick the low-hanging fruit" first in order to achieve the greatest benefit at the lowest overall cost. However, there was a vast difference of opinion on how quickly additional sources should be required to attenuate or eliminate their contributions of PCBs to the river. Not surprisingly, those parties concerned about having to pay for expensive remediation or treatment efforts (e.g., POTWs and industries) typically insisted on the need for consideration of costs and benefits and maintained that tighter controls should be phased in slowly enough to allow periodic assessment of improvements and evaluation of whether further actions are even necessary. Environmental stakeholders, by contrast, insisted that all contributors should be required to control their PCB discharges immediately, regardless of cost. Regulators generally fell somewhere in between. Representatives of municipal authorities also expressed concern regarding the amount of

sampling and analysis that may be required as part of the long-term monitoring needed to measure the success of the TMDL. These stakeholders pointed out that the expensive sampling and analysis places a significant financial burden on smaller municipalities and that this cost would be especially unfair in cases in which the sampling consistently detects no PCBs.

One municipal authority representative spoke of the need to distinguish true and perceived effects of PCBs entering the river basin, noting that PCBs already reside in the river sediments. This interviewee expressed the opinion that requiring dischargers to bear the costs of reducing their contribution of PCBs to the river is acceptable as long as the expense can be shown to be a worthwhile investment. This discussion is complicated by the fact that PCBs in fish tissue, soils, and sediments are relatively stable over time. Accordingly, even significant reductions in inputs of PCBs to the river basin may not manifest as reduced fish tissue concentrations for some time, perhaps years. This consideration further complicates the issue of how quickly to implement controls across all known sources and whether to tailor implementation according to the size of each source.

The need for a larger public health perspective by some. Some potential dischargers suggested that a true consideration of public health is missing from the TMDL process. The implication is that in the larger public health perspective, spending large sums to reduce or eliminate fish consumption advisories in the Delaware Estuary may not be a prudent investment in public health because the number of people who eat contaminated fish from the Delaware is small compared with the number of people adversely affected by other public health issues. Regulators and environmental groups dismiss this concern by saying that: 1) the criteria developed by EPA are based on health criteria and must be followed to comply with the Clean Water Act; and 2) ecological concerns are also important.

Criteria protective of wildlife should be considered. In the Spring of 2003, the State of New Jersey and EPA Region 2—in consultation with the U.S. Fish and Wildlife Service—are expected to adopt a New Jersey water quality criterion of 72 picograms/liter for PCBs that would protect wildlife. This criterion would be more stringent than the current human health criterion of 44 picograms/liter, because it is based upon lower flow conditions associated with a 90-day exposure period, rather than upon the higher, harmonic mean flow and 70-year exposure period used in developing the human health criterion. New Jersey's proposed wildlife criterion was developed in response to a consultation pursuant to Section 7 of the Endangered Species Act.

Inequitable costs of TMDLs are a worry to some. A common concern voiced by large industrial stakeholders is that they will be asked to bear the brunt of paying for cleanup because they have the financial capacity and their sources are easier to identify—the deep pockets and the point sources. One industry stakeholder stated that a recent Ninth Circuit Court decision requires TMDLs to address non-point as well as point sources.

Potential changes in federal TMDL regulations. Regulatory uncertainty at the federal level—meaning the likelihood that EPA will promulgate a new TMDL rule—is viewed by the state and federal regulatory agencies as a relatively minor issue and should not curtail the ability of the two EPA regions to identify a target for the TMDL. Some regulators expressed the belief that—even if EPA promulgates a new TMDL rule—the Delaware Estuary PCB TMDL would likely be grandfathered.

3.0 Stakeholders' Recommendations Regarding the Formation and Functioning of the Implementation Advisory Committee

The TMDL IAC was authorized by the DRBC in order to provide stakeholders with an opportunity to propose creative and cost-effective alternatives for achieving the DRBC's water quality standards per Element 6 of the *Delaware Estuary PCB Strategy*, developed in consultation with the Toxics Advisory Committee. The goal of the IAC, based on the strategy, is to achieve water quality standards in order to eliminate fish consumption advisories. As conceived of by the DRBC, specific tasks it may undertake include:

- develop information on programs that are working elsewhere that could benefit the estuary, such as pollution prevention, trading, etc. (within 3 months of the IAC's first meeting);
- develop proactive PCB release prevention strategies for PCBs currently in service but not leaking to air, water, or earth (within 6 months of the IAC's first meeting);
- develop strategies for reducing PCB releases to meet the TMDL, including strategies and programs to reduce currently leaking PCBs, reduce loadings from PCBs already in the ecosystem, reduce point source loadings, reduce loadings from the tributaries, and make recommendations on new rules; and
- develop alternative waste load and load allocations that include the consent of all affected dischargers per Section 4.30.7(B)(4)(a).

3.1 Stakeholders' Principles for a Successful Implementation Advisory Committee

There was widespread enthusiasm for an implementation group by the interviewees, with some expressing that an implementation group was *absolutely necessary*. There were some questions about whether the group should be advisory at all or whether it should, instead, operate on a consensus basis to take action with representation from all affected parties. The large percentage of interviewees felt there was value in having IAC meetings begin well prior to the 2003 deadlines in order to begin researching and discussing cost-effective, innovative solutions for addressing issues. This was balanced by the desire to have enough data and modeling to begin to really understand the system enough to target actions. Specific key principles for a successful IAC as expressed by interviewees who expressed opinions are outlined below.

The DRBC must build confidence that data gathering, analysis, and TMDL modeling are based on good science in order for the IAC to have any credibility. A common view expressed by most of the dischargers interviewed is that prospective IAC members must have confidence in the data and modeling approach before committing to working toward an implementation approach. This means having confidence that the TAC has evaluated all data required from different PCB studies and can assure its integrity. This they believe is critical for establishing a scientifically credible TMDL for PCBs. IAC members must have confidence in the data in order to identify and prioritize PCB reduction strategies. Two specific suggestions from the Coalition as to how to achieve this outcome include:

- *Convening a Modeling Experts Work Group*—The Coalition suggests a Modeling Experts Workgroup including technical experts from industry coalition

as a means to facilitate more frequent and better communications among the experts in a forum to foster open discussion and proposals for resolving the highly complex and technical issues confronting the DRBC in developing the TMDL model. (This suggestion has been rejected by the DRBC because it felt the Expert Panel already serves this function and was created in a neutral fashion. Environmental organizations had concerns that should another experts group be formed and dischargers have a seat at the table, they would want one too and they did not have the funds to hire an expert.)

- *Conduct/Participate in a Data Forum—* The purpose of this two-day forum is to hear the results from the key studies that have been conducted to help develop the TMDL and to discuss how these findings will be used to help develop the TMDL model. This workshop was approved by the Toxics Advisory Committee at their May 7 meeting and reaffirmed by the Experts Panel at their June 27 meeting. Attendance at this workshop would include the principal investigators who performed the various studies and data collection efforts and members of the TAC, including DRBC staff and their consultants, regulatory and resource agency representatives (EPA, states, U.S. Fish and Wildlife Service, etc.) and the Coalition. Any interested stakeholders would be welcome to observe the proceedings; however, active participation would be limited to the scientists and modelers. (This two day event took place in October and was well attended by regulators and dischargers.)

Nearly all the stakeholders who had an opinion about science (namely municipalities and industry) were adamant that the IAC's success would be significantly compromised if questions about science were not clarified and resolved.

The IAC must have clearly defined purpose and scope. Several stakeholders stated that the DRBC must clearly define the purpose and scope of the IAC before inviting stakeholder representatives to serve on the committee. The DRBC has prepared an initial charge and scope of work for the IAC. (See *Section 3.0 Stakeholders' Recommendations Regarding the Formation and Functioning of the Implementation Advisory Committee* for a more complete discussion of the draft purpose and scope.) This will need to be reviewed and revised to incorporate any recent developments for the IAC.

The IAC must have representation of all major sources of PCBs and other interested parties. All of the major players need to be involved. Potential dischargers felt that all entities that are likely to be required to make changes or conduct studies or monitoring should have representation at the table, either directly or through an alliance or coalition. Many expressed the desire to have environmental or public interest groups at the table as observers and innovators, a watchdog function to ensure that dischargers do not exert undue pressure and make the controls less protective of the environment.

The IAC must have a chair who is well-respected and neutral with leadership qualities. The chair of the IAC was a much discussed topic. The ideal chair is someone who has a good handle on policy issues, but who can pay attention and understand the technical details. Some stakeholders were adamant that this person needs to be well-respected and not have a stake in the issues.

Others thought that a co-chair arrangement with one regulatory and one industry representative would provide for balance but still have the internal incentives necessary to get things done. This argument was countered by another stakeholder who suggested that both regulators and industry have an incentive to stretch out the process, but for different reasons. Regulators may have a disincentive to move quickly because once the TMDL gets implemented they are in a position where they have to find resources to enforce the actions needed by point sources, find resources to address non point sources, and defend their positions and actions. Dischargers have an incentive to draw out the process since it is likely that they will have to spend money to address loadings. Very many stakeholders were adamant that a DRBC staff person should not be the chair, but should provide the chair with information.

The IAC's recommendations must be taken seriously by the DRBC and other regulators. Stakeholders do not want the IAC process to be mere "window dressing" to demonstrate stakeholder involvement on decisions that may have already been made. There was a difference of opinion about how decisions or recommendations will be made. Some thought that a consensus of dischargers regarding alternative waste load and load allocations without decision making power by non-dischargers was appropriate as long as there was no increased harm or negative effects. Others felt that consensus decisions of any type were not acceptable, because consensus presumes compromise, which may not be the best environmental outcome possible.

The IAC process must be well-managed and include support for chair and research. Stakeholders believe the IAC process must be well managed to avoid losing focus, wasting time, and getting bogged down. A well-managed process would involve appointing a capable chair to lead the committee, resources to support thoughtful and well-designed meetings, effective meeting management and follow-up, clearly defined roles and responsibilities for IAC members, and clear time frames and deadlines for accomplishing the IAC's charge. Nearly all stakeholders identified the need for contractor support to plan the meetings, facilitate the meetings, and prepare material for deliberation by the IAC. Additionally, groups felt the need for a commitment by all participants up front to provide resources to carry through to the end of the work plan.

The IAC must act as a bridge between science and policy. There was not consensus on this issue, but many stakeholders across the board expressed the need for the IAC to not only consider implementation issues, but ensure that the implementation would be politically viable with all the regulatory entities. Policy and technical experts should be at the table. Several stakeholders mentioned the importance of keeping the Commissioners and regulators informed.

The TMDL must be implemented without delay. There was a concern expressed by environmental and regulatory stakeholders that the TMDL development process result in improvements in the resources for humans and/or wildlife. One stakeholder mentioned that there are potential ramifications for non-implementation of the TMDL in that Natural Resources Damages Assessments could be levied under CERCLA to some subset of dischargers. This assessment could be based on research that implies reproductive impairment of

eagles due to bioaccumulation of PCBs. There was concern that the collaborative nature of the IAC not delay implementation of the TMDL unduly.

3.2 Stakeholders' Descriptions of a Successful Implementation Advisory Committee

Success as described by stakeholders includes:

- environmental improvements occur. This was expressed by some as meeting water quality criteria and by others as seeing noticeable reductions in wildlife impacts;
- the TMDL is not litigated;
- investments made to control or remove discharges of PCBs in the estuary are proportional to the improvements gained and actions actually make a difference in environmental quality;
- no one feels bullied and there are no negative feelings associated with the TMDL;
- the public gains a better understanding of toxics issues in the estuary;
- experience translates to a greater desire to work collaboratively in the future; and
- there is continuity of purpose and practice between political administrations.

3.3 Stakeholders' Recommendations Regarding Implementation Advisory Committee Membership

The IAC members should have a commitment to action. Members of the IAC should be committed to doing their homework, be willing to define and agree on common goals for the group, commit to taking action, and commit to support quality project management through funds for management and facilitation.

The IAC members should commit to honest discourse. Members of the IAC should be committed to civil discourse and a problem-solving approach. Members of the IAC should agree to keep confidential sensitive information.

The following list of types of members were mentioned by interviewees:

- industrial dischargers (could be as an alliance), both large and small;
- municipalities who will need to make reductions or conduct monitoring;
- a member from each regulator (sometimes multiple depending on the topic at hand);
- environmental and public health representatives;
- experts from academia, other federal agencies, etc., who can bring specific expertise or innovative ideas to the table;
- subsistence fishing group; and
- sport fishing group.

4.0 Summary and Conclusions

There is real interest in this project and a realization that an implementation group of some sort is probably needed to avoid litigation in this matter as well as desired to develop a process that works for future TMDL efforts. The sophistication of understanding regarding the regulatory, scientific, and technical aspects of both the TMDL process and PCB contamination by stakeholders is quite high, a factor which increases the probability of developing innovative and cost-effective implementation solutions.

Although strides have been made to assuage some of the criticisms, discharger stakeholders continue to be concerned about three major issues: the quality of data and analysis that will make up the model; the lack of sharing of information; and the lack of consensus among the regulatory agencies. Environmental and public health stakeholders are generally not concerned about the details of the scientific aspects but want to ensure that the TMDL is implemented with the biggest environmental benefit possible and that the implementation is enforced.

There appears to be a commitment by major dischargers and key environmental and public interest groups to commit time and resources to such an effort if the scope of the project, and how the input will be used, can be agreed to ahead of time.

Volume Two entitled *Marasco Newton Group's Recommendations Regarding the Membership, Structure, and Functioning of the Implementation Advisory Group* follows. It provides recommendations to address issues and concerns noted in this volume and suggests ways to ensure good documentation of the decisions made and their rationale.